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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,782	12/27/2001	Chang Ho Oh	8734.041.00 - US	9753
30827 7590 11/29/2007 MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER ERDEM, FAZLI	
			ART UNIT 2826	PAPER NUMBER
			MAIL DATE 11/29/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/026,782

Applicant(s)

OH ET AL

Examiner

Fazli Erdem

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 and 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 11-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

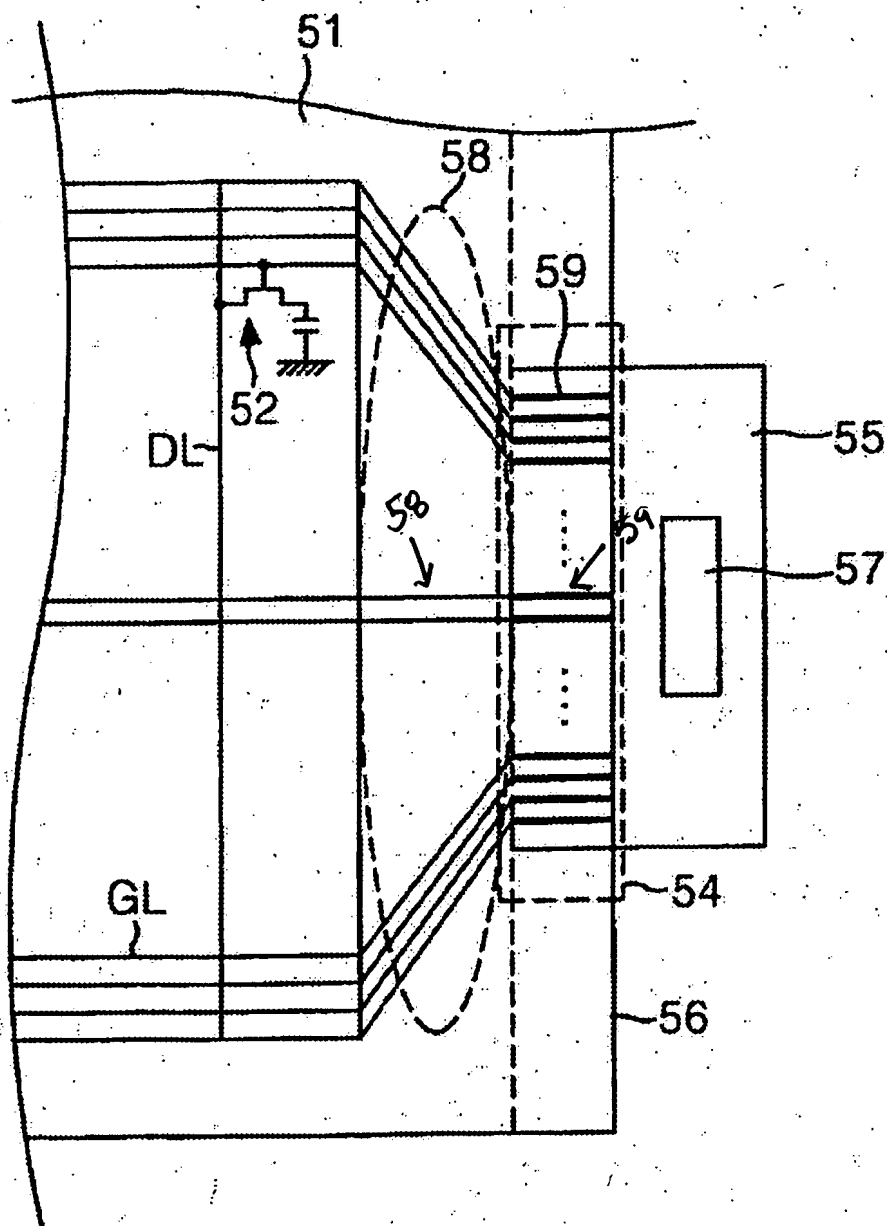
### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/19/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 9/18/2007 have been fully considered but they are not persuasive. Fig. 1 of applicants admitted related art (AARA), discloses 3 pad lines each on top and bottom portion of the figure. However, there also has to be pad lines in the middle portion of the figure, since the middle portion of the figure has to be populated with pad lines as well.



In Fig. 1 above, disclosed as conventional art, there are two straight/central gate pad lines 59 in the middle between 4 slanted lines at top and 4 slanted lines in the bottom. Assuming the two straight/central gate pad lines are actually connected to middle two pads 59, then the connection

between the two middle pads 59 to the two straight/central gate pad lines 58 in the middle will be a straight connection and have the same angle.

2. Having pad lines in the middle portion of Fig. 1 will have the required angle configuration. That is pad lines in the middle portion will have straight angle. It won't have acute angle, however, claim 1 does not required the angle to be acute. Furthermore, the reason claims 11-15 were rejected under 103 as opposed to 102, was to satisfy the acute angle requirement.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-5 and 11-15 rejected under 35 U.S.C. 102(a) as being anticipated by applicant's prior art admission.

Regarding Claim 1, applicant's admitted prior art of Fig. 1 discloses a liquid crystal display device, comprising: a plurality of liquid crystal cells on a substrate indicated by the dashed line; a plurality of drive lines GL and DL extending along first and second directions and connected to the plurality of liquid crystal cells; a plurality of pads 59, each extending at an angle (a straight angle or a 90 degrees angle) from an edge of the substrate; and a plurality of corresponding pad lines 58 (specifically two pad lines at the middle portion), each extending at the same angle as the angle (straight angle or a 90 degrees angle) of the corresponding pad and interconnected between each of the plurality of drive lines and pads.

Regarding Claim 2, the device according to claim 1, wherein the plurality of drive lines includes gate lines and data lines as labeled GL and DL

Regarding Claim 3, the device according to claim 1, wherein the plurality of pads extending at the first angle (straight angle or a 90 degrees angle) correspond to a location of the liquid crystal cells to be connected.

Regarding Claim 4, the device according to claim 3, further includes a tape carrier package 55/57 having a signal pad extending at the first angle and electrically contracting the plurality of pads

Regarding Claim 5, the device according to claim 4, further includes a driving circuit 57 mounted on the tape carrier package for supplying the external drive signals

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-15 rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art of Fig. 1 in view of Wildes et al. (US Patent No. 5,951,304).

Regarding Claim 11, Fig. 1 of admitted prior art discloses a liquid crystal display device, comprising: a substrate dashed line; a plurality of orthogonal drive lines GL and DL on the substrate; a plurality of pads 59 extending at a first angle from an edge of the substrate; a plurality of pad lines 58, extending at the first angle and interconnected between each of the plurality of orthogonal drive lines and pads. Fig. 1 fails to show the pad lines extending in an acute angle. However, Wildes et al. disclose a fanout interconnection pad arrays where in Fig. 5, pads 68 extend at an acute angle.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the acute angle shaped pads in Fig. 1 of admitted prior art in order to have a pad layout with better controlled wiring/interconnection structure.

Regarding Claim 12, wherein the plurality of drive lines of Fig. 1 includes gate lines GL and data lines DL.

Regarding Claim 13, the device according to claim 11, wherein the plurality of pads 59 extending at the first angle are disposed at the edge of the substrate

Regarding Claim 14, the device according to claim 13, further includes a tape carrier package 55/59 having a signal pad extending at the first angle and electrically contacting the plurality of pads.

Regarding Claim 15, the device according to claim 14, further includes a driving circuit 57, mounted on the tape carrier package for supplying external drive signals to the plurality of drive lines

### *Conclusion*

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (571) 272-1914. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FE  
November 16, 2007

  
SUE A. PURVIS  
SUPERVISORY PATENT EXAMINER